SV2-022B

Gold Star Audio

SERVICE MANUAL

for service technician

SV2-022B

Gold Star Co., Ltd.

AM/FM STEREO TUNER

GST-1000
GST-1010

SPECIFICATIONS

This specifications may be changed for improvement of performance without notice.

GENERAL

Semiconductors	:	6IC, 1MOS FET, 11TR, 20 Diodes
Power Supply	:	See the back panel of unit
Power consumption	:	18 watts
Dimensions	:	420x140x335 (m/m)
Weight	:	8kg

OUT PUT SECTION

out put terminal (out put level/out put impendance)

FM (100% MOD.)	FIXED: 750mV/4.2KΩ VARIABLE: 1.5V/3.6KΩ
AM (30% MOD.)	FIXED: 250mV/4.2KΩ VARIABLE: 350mV/3.6KΩ

AM TUNER SECTION

Tuning range	535KHz–1605KHz
Usable sensitivity	Built in antenna 400μV/m
Selectivity	30dB
Signal to noise ratio	40dB
IF rejection	48dB
AGC figure of merit	40dB

FM TUNER SECTION

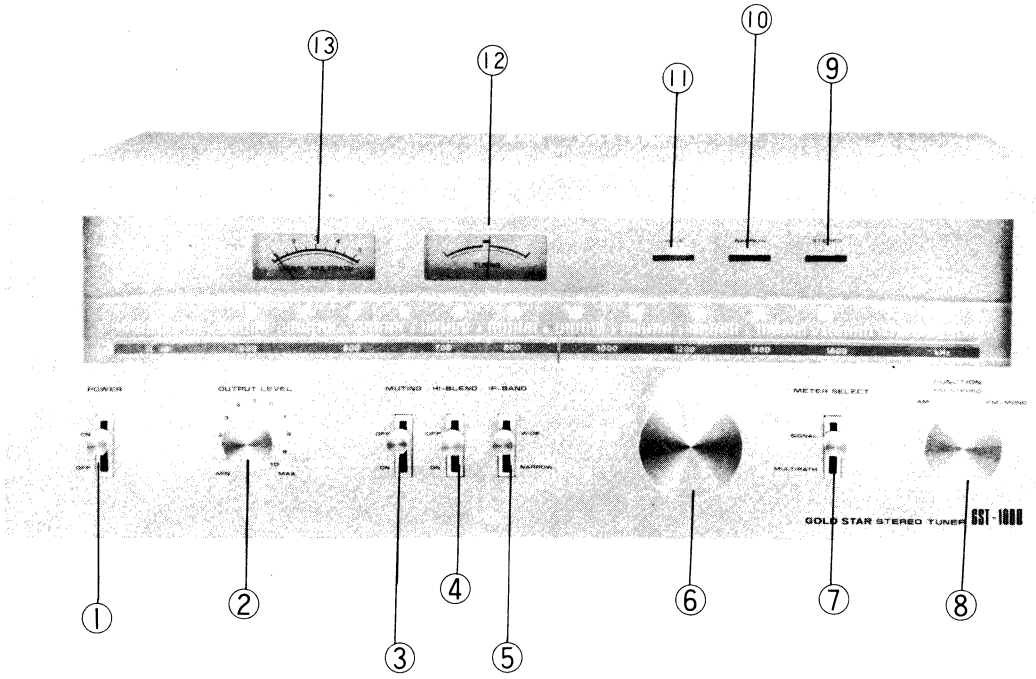
Tuning range	87MHz–109MHz
IHF sensitivity	1.8μV
Sensitivity at 50dB quieting	MONO: 3.0μV STEREO: 4.0μV
Signal to noise ratio	MONO: 75dB STEREO: 70dB
Image rejection	70dB
IF rejection	100dB
Frequency response (20Hz–15.5KHz)	+0.5dB, -3dB
Separation	100Hz: 35dB 1KHz: 48dB 10KHz: 35dB
Capture ratio	1.5dB
Selectivity (40 dB±400KHz)...	60dB
Harmonic distortion	
MONO	100Hz : 0.25% 1KHz : 0.25% 10KHz: 0.25%
STEREO	100Hz : 0.3% 1KHz : 0.25% 10KHz: 1%

Printed in Korea June, 1981

CONTENTS

OPERATING CONTROLS 1
CABINET DISASSEMBLY 2
DIAL STRINGING 3
ALIGNMENT INSTRUCTIONS 3-6
ELECTRICAL PARTS LOCATIONS 7, 8
WIRING DIAGRAM 9, 10
SCHEMATIC DIAGRAM 11, 12
EXPLODED VIEW 13, 14
MECHANICAL PARTS LIST 15
ELECTRICAL PARTS LIST 16

OPERATING CONTROLS

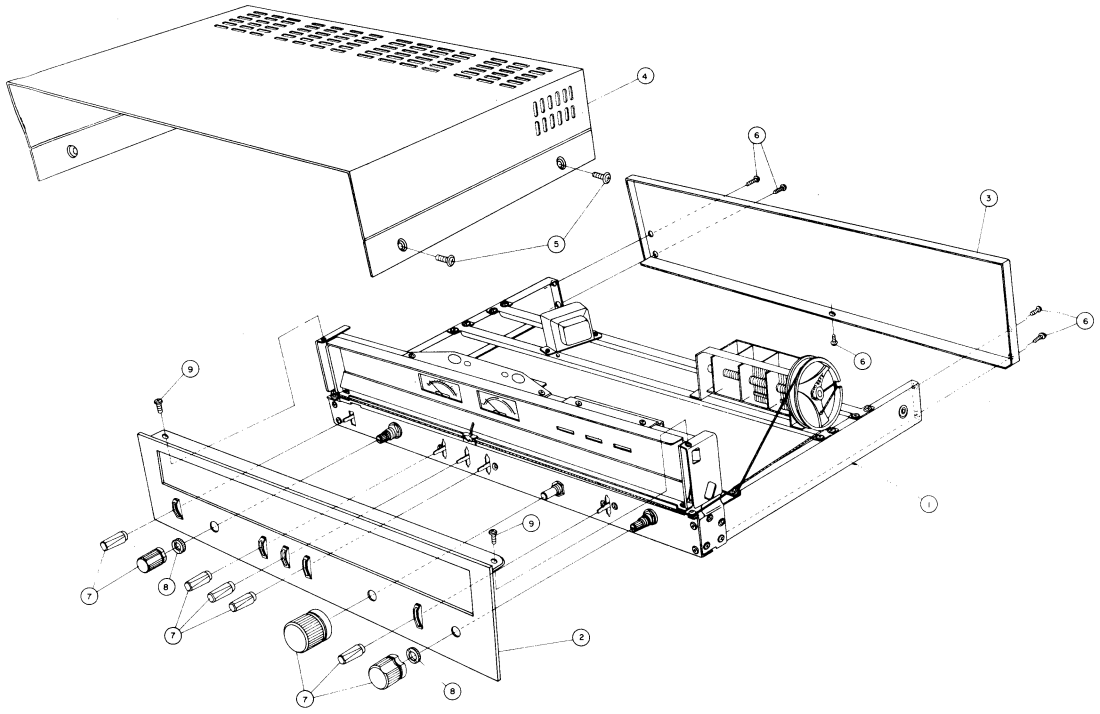


1) POWER SWITCH
2) OUTPUT LEVEL CONTROL KNOB
3) MUTING SWITCH
4) HI-BLEND SWITCH (Only MODEL GST-1000)
5) I F-BAND SELECTOR (Only MODEL GST-1000)
6) TUNING KNOB
7) METER SELECTOR
   (In case of MODEL GST-1010, this SELECTOR is changed into 4) position where HI-BLEND SWITCH is located.)
8) FUNCTION SELECTOR
9) STEREO INDICATOR
10) NARROW INDICATOR
    (In case of MODEL GST-1010: FM INDICATOR)
11) WIND INDICATOR (In case of MODEL GST-1010: AM INDICATOR)
12) TUNING METER
13) SIGNAL/MULTIPATH METER

CABINET DISASSEMBLY

1. Remove 4 screws⑤ holding the top case and lift the top case④ from the main chassis.
2. Remove 2 screws⑨ holding the front panel and take out all control knobs. And then remove special screw⑨.
3. Remove the front panel② from the front chassis.
4. Remove 5 screws⑥ holding the rear panel and remove the rear panel③ from the main chassis.

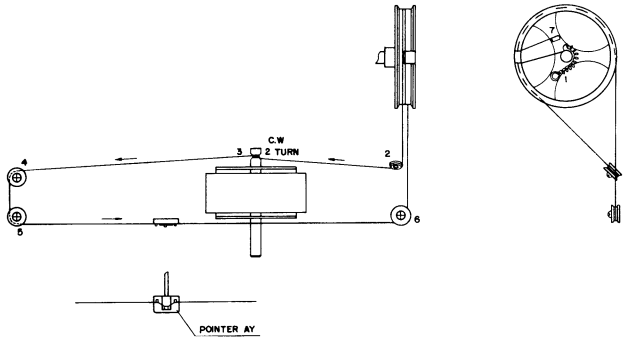
* See the exploded view (page 12, 13) for detailed disassembly.



DIAL STRINGING

STRINGING METHOD

1. Hook the cord on the pulley as using spring.
2. Wind the cord two times clockwise on the tuning shaft.
3. Wind the cord one and a half times counter-clockwise.



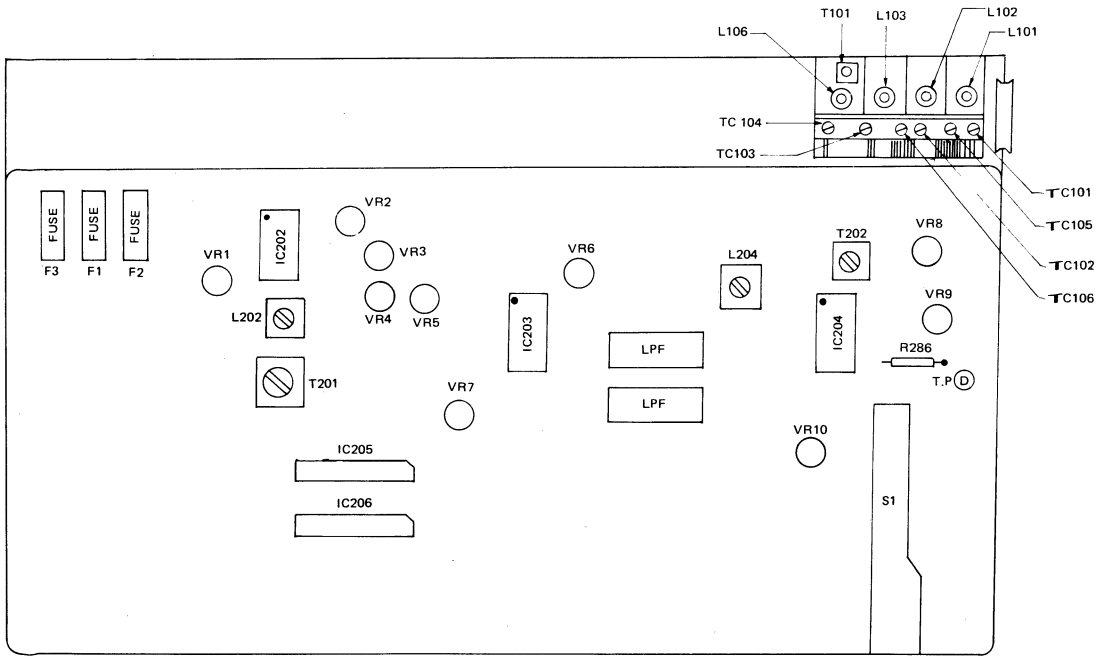
Set the varicon to minimum capacitance.

And string the cord by following the number sequence order as shown in figure.

ALIGNMENT INSTRUCTIONS

This stereo tuner has been aligned at the factory and normally will not require further adjustment. As a result, it is not recommended that any attempt is made to modificate any circuit. If any parts are replaced or if anyone tampers with the adjustments, realignment may be necessary.

Adjustment and test points location



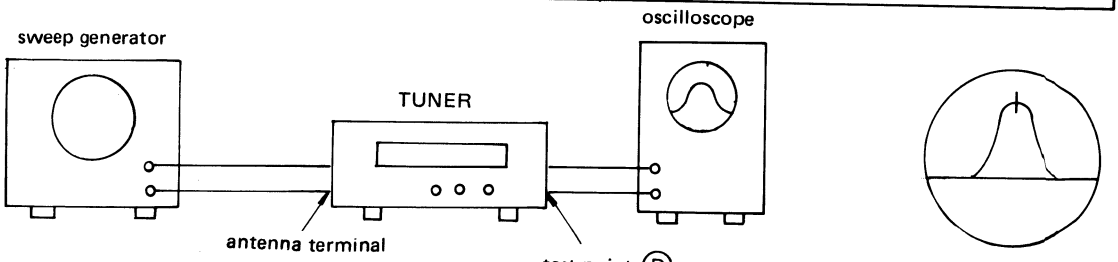
Instruments required

1. Signal generator (AM and FM)
2. IF sweep generator (AM and FM)
3. Test L00p antenna (for AM)
4. Dummy antenna (for FM)
5. VTVM
6. Oscilloscope
7. Stereo modulator
8. Frequency counter

AM ALIGNMENT

1. IF ALIGNMENT

Step	Adjustment	Remarks
IF Response	T202 IF Transformer	Adjust for scope pattern ith specified marker (455kHz) as shown in Fig.9



2. RF ALIGNMENT

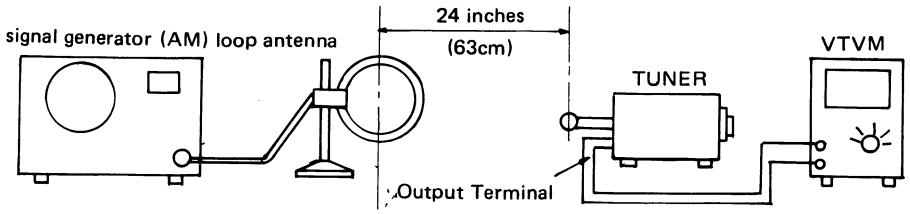
Step	Adjusting Circuit	Connection		SG Frequency	Position of Tuning Dial	Adjustment	Remarks
		Input	Output				
1	OSC (Frequency Coverage)	Connect signal generator to test loop.	Connect VTVM to output terminal (FIXED)	515 kHz (400 Hz 30% MOD.)	gang closed	L204	Maximum
2				1650 kHz (400 Hz 30% MOD.)	gang opened	TC106	
Repeat steps 1 and 2.							
3	ANT (Tracking)	Connect signal gen :ator to test loop.	Connect VTVM to output terminal (FIXED)	600 kHz (400 Hz 30% (MOD.)	Tuen to 600 kHz signal	AM ANT coil (L2)	Maximum
4				1400 kHz (400 Hz 30% MOD.)	Tune to 1400 kHz Signal	TC105	Maximum
Repeat steps 3 and 4.							

3. GENERAL ALIGNMENT

1	AGC/AM output level	Connect signal generator to test loop.	Connect VTVM to output terminal (FIXED)	1000 kHz (400 Hz 30% MOD.)	Tune to 1000 kHz signal	VR8, VR9	*1
2	Signal meter sensitivity			"	"	VR 10	*2
Repeat steps 1 and 2							

*1 : Adjust to obtain 250mV on VTVM when applying 5mV(74dB) SSG input signal.
*2 : Adjust to indicate 4.5 on signal meter when applying 5 mV (74dB) SSG input signal.

Note: When adjusting the AM tuner section, inductiviely connect the minimum input signal to the set.



FM ALIGNMENT

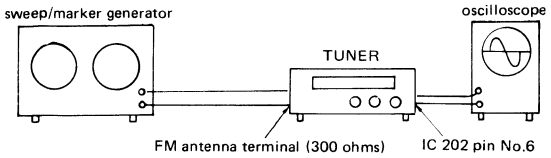
1. IF & RF ALIGNMENT

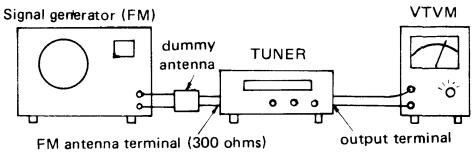
Step	Adjusting Circuit	Connection		SG Frequency	Position of Tuning Dial	Adjustment	Remarks
		Input	Output				
1	IF	Connect sweep generator to FM ANT terminal (300 ohm)	Connect oscillo-scope to TP (IC 202 pin 6)	10.7 MHz	Near Max. capacity of VC. at position with no unrequired signal.	T201 (Lower core only)	10.7MHz
2	Radio Det.		Connect oscillo-scope to TP (IC202 pin6)			T201 (Upper core only) L302	75kHz
3	OSC (Frequency coverage)	Connect FM signal generator to FM ANT. terminal (300 ohm)	Connect VTVM to output terminal	87.5 MHz (400 Hz 30% MOD.)	Low end of dial scale	L106	Maximum
4				109 MHz (400 Hz 30% MOD.)	High end of dial scale	TC104 Trimmer	
Reapt steps 3 and 4 for minimum change.							
5	Tracking	Connect FM signal generator to FM ANT. terminal	Connect VTVM to output terminal.	90 MHz (400 Hz 30% MOD.)	Tune to 90 mhz signal.	L101, 102 L103, T101	Maximum
6				106 MHz (400 Hz 30% MOD.)	Tune to 106 MHz signal.	TC101 TC102 TC103	
Repeat steps 5 and 6 for minimum change.							

2. GENERAL ALIGNMENT

Step	Adjusting Circuit	Connection		SG Frequency	Position of Tuning Dial	Adjustment	Remarks
		Input	Output				
1	Tuning meter	–	–	–	no signal	VR1	*3
2	output level	Connect FM signal general to FM ANT. terminal (300 ohm)	Connect VTVM to output ter-minal (FIXED)	98 MHz (1 kHz 100% (MOD.)	Tune to 98 MHz signal	VR4, VR5	To obtain 1.7V on the output ter-minal (VARIABLE).
3	Muting sens.		–	"	"	VR2	To get muting sens. 15-20dB
4	Signal meter level		–	"	"	VR3	*4

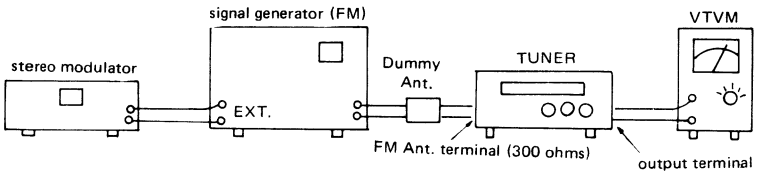
*3: In noise with no signal, adjust VR1 so that tuning meter may be indicated halfway in the indication.
*4: Adjust VR3 so that signal meter may be indicated about 4.5.

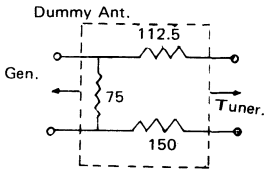




3. MPX ALIGNMENT

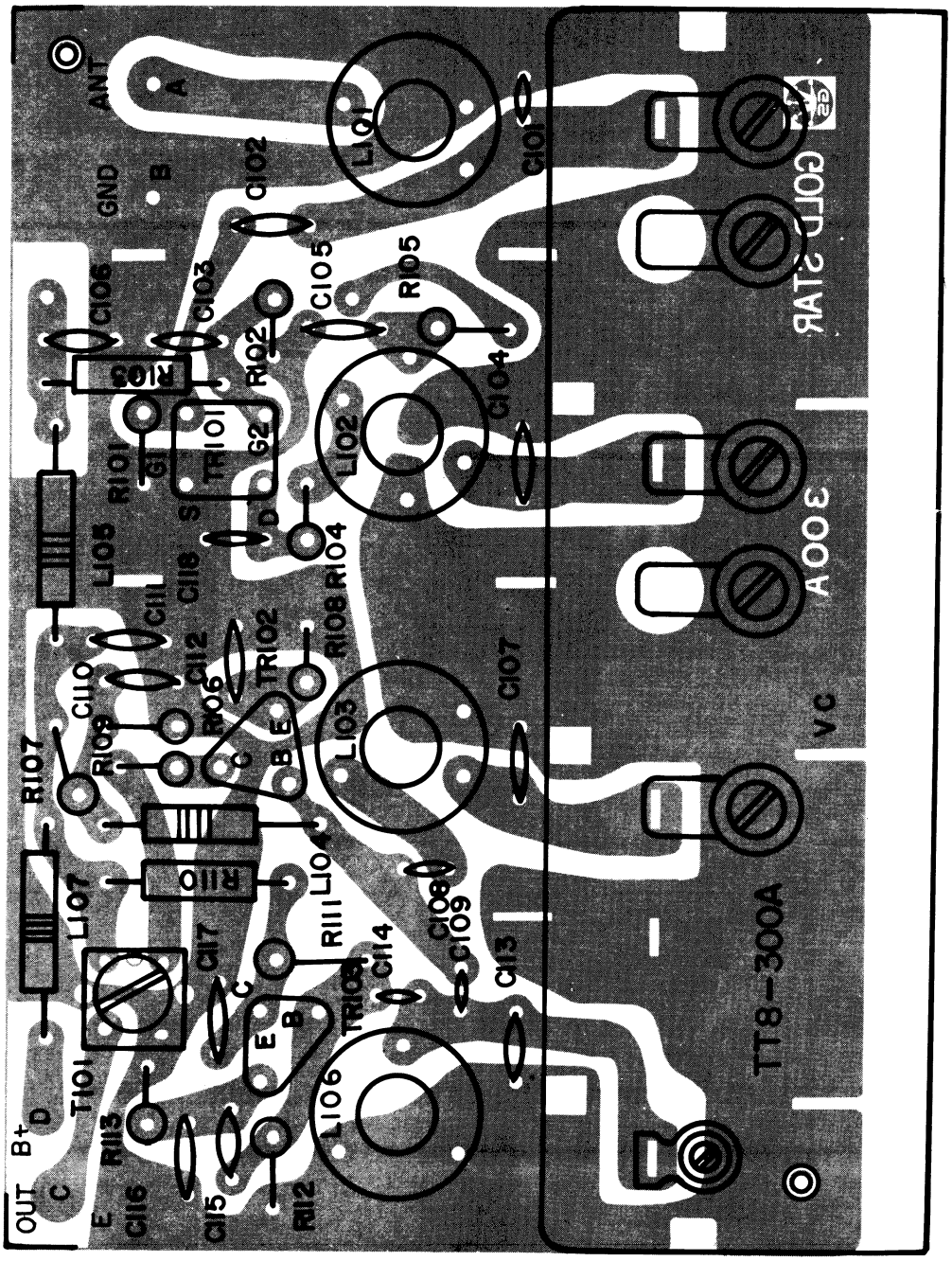
Step	Connection		SG Frequency	Position of Tuning Dial	Adjustment	Remarks
	Input	Output				
Stereo separation	Connect FM signal generator to FM ANT. terminal (300 ohms)	Connect VTVM to output terminal. (FIXED)	98MHz (1KHz L+R 90% pilot 10%	Tune to 98MHz signal	VR6, VR7	Left ch: Max Right ch: Min (R ch: Max L ch: Min)



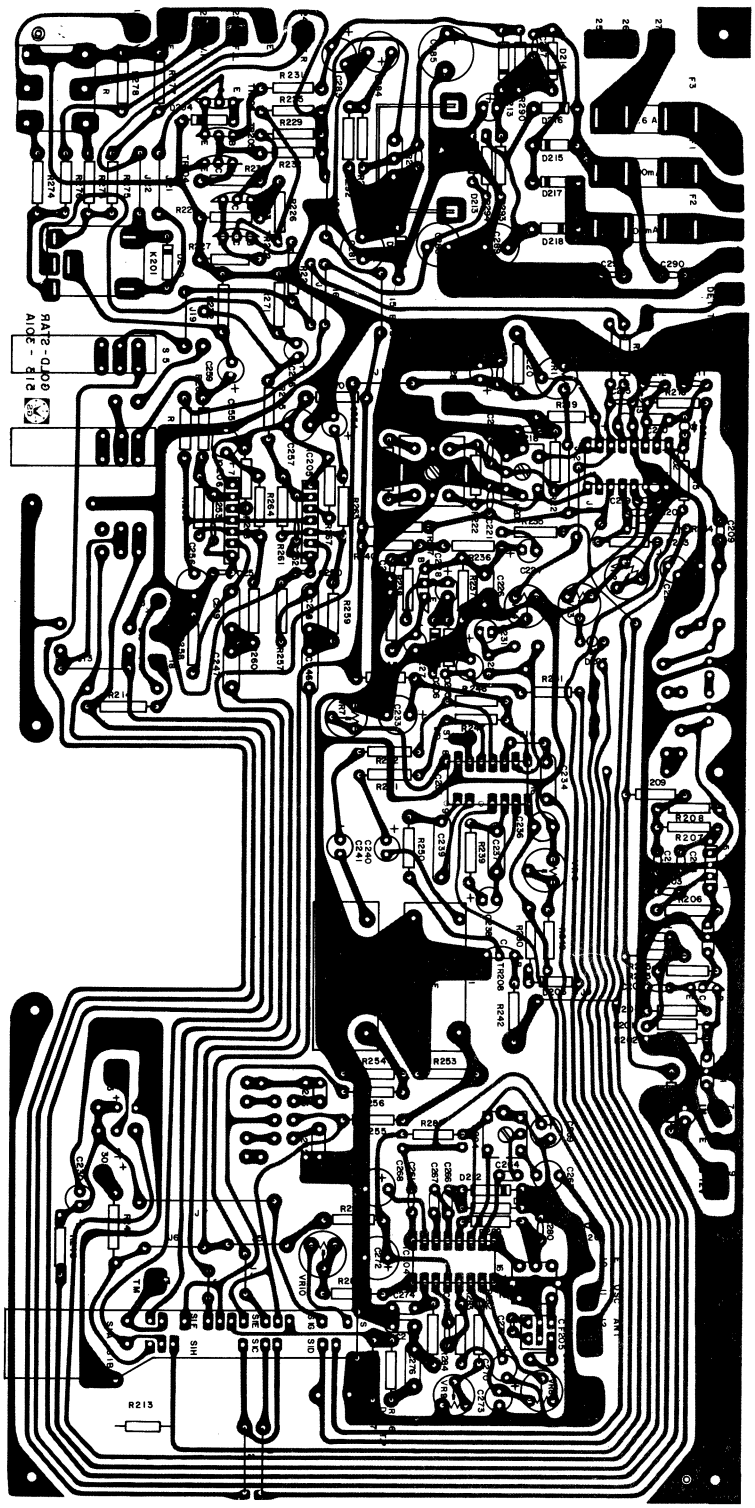


ELECTRICAL PARTS LOCATIONS

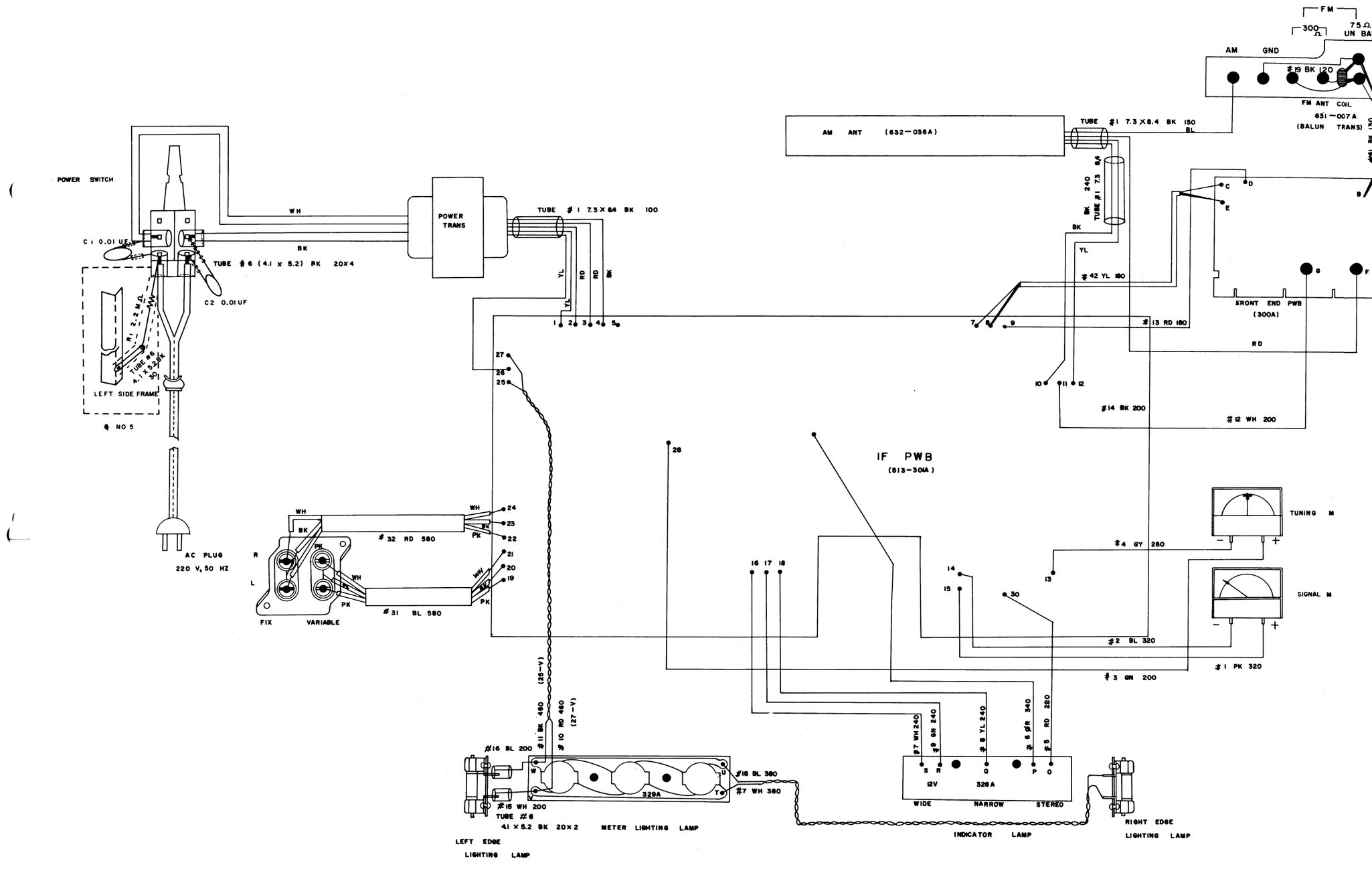
FRONT END



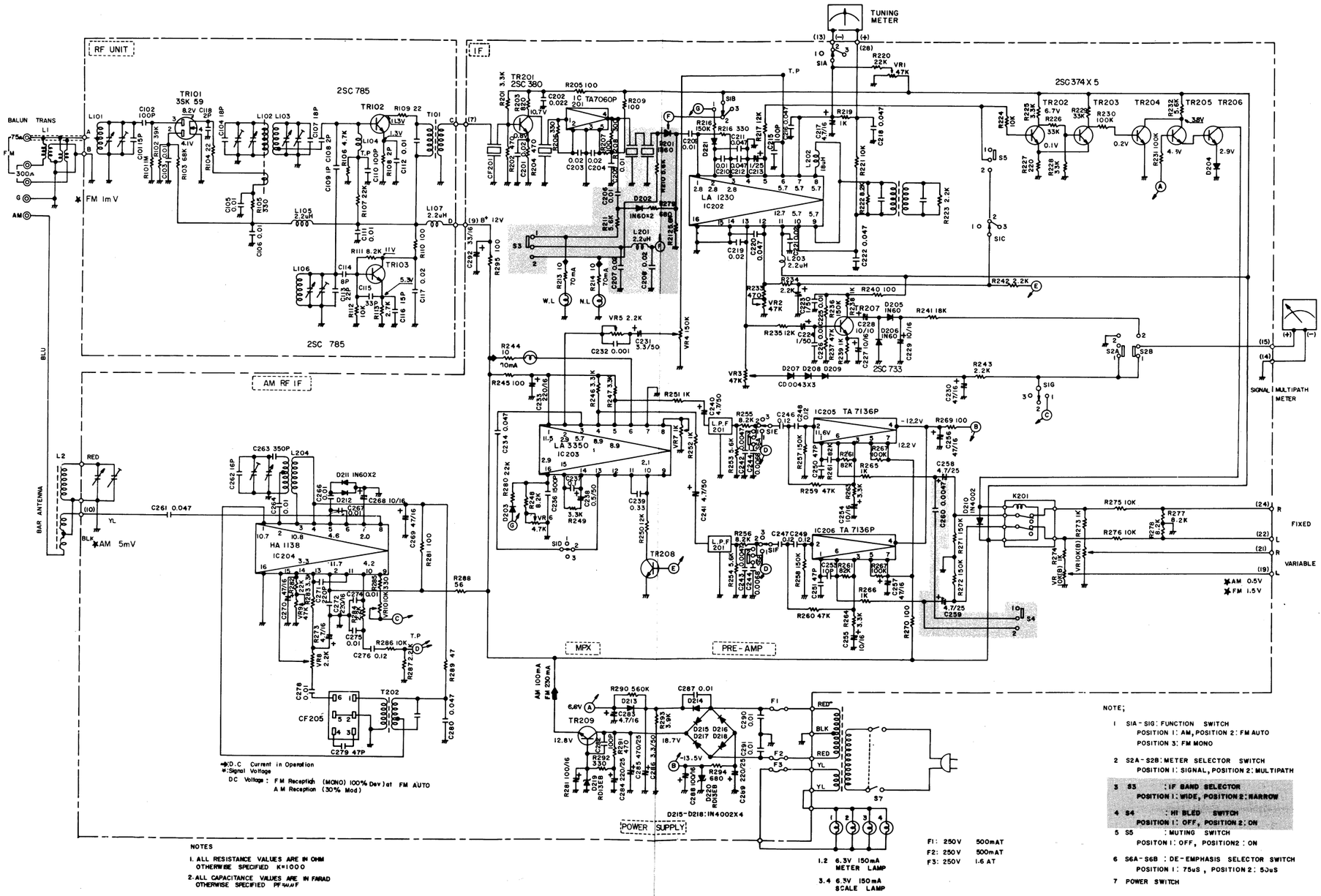
AM & FM IF, MPX



WIRING DIAGRAM



SCHEMATIC DIAGRAM



*D.C Current in Operation
*:Signal Voltage
DC Voltage : FM Reception (MONO) 100% Dev)at FM AUTO
AM Reception (30% Mod)

NOTES
1. ALL RESISTANCE VALUES ARE IN OHM OTHERWISE SPECIFIED K=1000
2. ALL CAPACITANCE VALUES ARE IN FARAD OTHERWISE SPECIFIED PF=μμF

D215-D218: IN4002X4

F1: 250V 500mAT
F2: 250V 500mAT
F3: 250V 1.6 AT

1.2 6.3V 150mA METER LAMP
3.4 6.3V 150mA SCALE LAMP

NOTE;
1 SIA-SIC: FUNCTION SWITCH
POSITION 1: AM, POSITION 2: FM AUTO
POSITION 3: FM MONO

2 S2A-S2B: METER SELECTOR SWITCH
POSITION 1: SIGNAL, POSITION 2: MULTIPATH

3 S3 : IF BAND SELECTOR
POSITION 1: WIDE, POSITION 2: NARROW

4 S4 : HI BLED SWITCH
POSITION 1: OFF, POSITION 2: ON

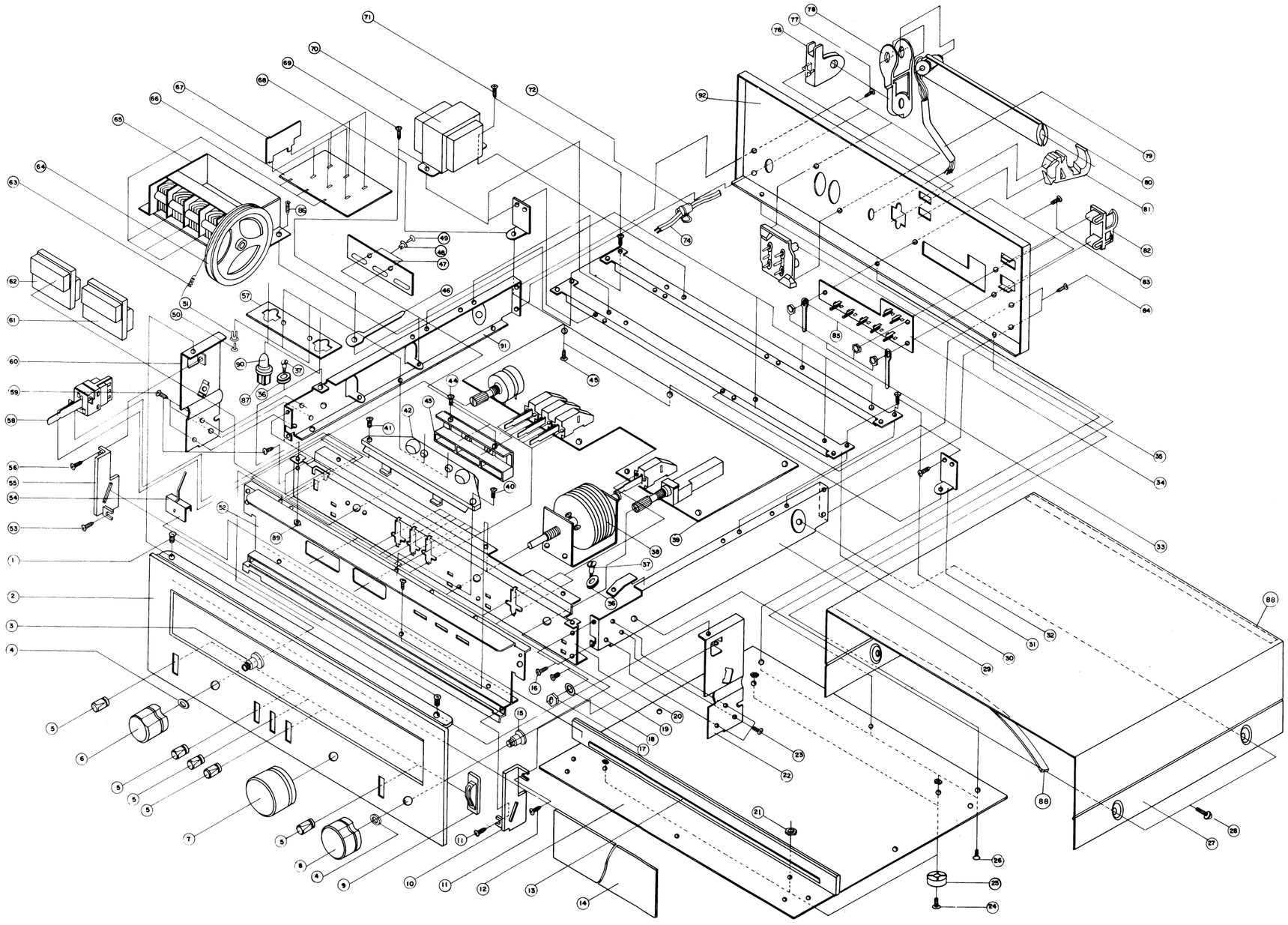
5 S5 : MUTING SWITCH
POSITON 1: OFF, POSITION2 : ON

6 S6A-S6B : DE-EMPHASIS SELECTOR SWITCH
POSITION 1: 75uS , POSITION 2: 50uS

7 POWER SWITCH

In case of MODEL GST-1010, portions identified by shaded area are deleted.

EXPLODED VIEW



MECHANICAL PARTS LIST

NO.	PART NO.	DESCRIPTION	NO.	PART NO.	DESCRIPTION
1	MCC1830J	SCREW, MCC+3X6 FZMY	47	511-326A	P.W.B. Ay, LAMP INDICATOR
2	258-070A	PANEL, FRONT (GST-1000)	48	341-041A	BUSHING, PIN
	258-070L	PANEL, FRONT (GST-1010)	49	356-008A	PIN, INSERT
3	341-124A	BUSHING, LOCK	50	356-008A	PIN, INSERT
4	352-601A	NUT, SPECIAL	51	341-041A	BUSHING, PIN
5	273-200A	KNOB, LEVER	52	258-068A	PANEL, SCALE PLATE
6	273-201A	KNOB, LEVER	53	TRQ1830I	SCREW, TRQ2 3X6A FBK
7	271-070A	KNOB, TUNING	54	361-103A	POINTER
8	273-202A	KNOB, FUNCTION	55	324-270A	HOLDER(L), SCALE PLATE
9	284-016A	GUIDE, LEVER S/W	56	TRQ1830I	SCREW TRQ2+3X6A FBK
10	324-269A	HOLDER(R), SCALE PLATE	57	513-329A	P.W.B. STANLEY LAMP
11	TRQ1830I	SCREW, TRQ2+3X6A FBK			1.6TX1000X1000
12	256-268A	PLATE, BOTTOM	58	556-031A	SWITCH, LEVER, SDE-4L
13	256-269A	PLATE SCALE	59	TRQ1836J	SCREW, TRQ2+3X8A
14	236-101A	WINDOW	60	321-187A	BRACKET(L), MAIN
15	341-124B	BUSHING	61	518-017A	METER, TUNING
16	TRQ1836J	SCREW, TRQ2+3X8A	62	518-016A	METER, SIGNAL/MULTIPATH
19	MRC1831J	SCREW, MRC+3X6	63	442-004I	SPRING
20	313-110A	CHASSIS FTONT	64	431-038A	DIAL PULLEY
21	NHA2200J	NUT	65	219-012A	HOUSING VARICON
22	321-187B	BRACKET (R), MAIN	66	513-300A	P.W.B. FRONT END
23	TRQ1836J	SCREW, TRQ2+3X8A	67	256-291A	PLATE, SHIELD(A)
24	MRC2243J	SCREW, MRC+4X14	68	321-608A	BRACKET P.W.B.
25	322-106A	SUPPORTER FOOT	69	353-607B	SCREW, SPECIAL(MSWR
26	TRQ1836J	SCREW, TRQ2+3X8A			FEMY 3X8+)
27	213-160A	CABINET	70	641-618C	TRANS, POWER
28	353-052B	SCREW, SPECIAL	71	353-607B	SCREW, SPECIAL(MSWR
29	315-038A	FRAME(R), SIDE			FEMY 3X8+)
30	315-047A	FRAME(A), ACROSS	72	324-348A	BUSHING, CORD
32	321-608A	BRACKET P.W.B.	74	681-039D	POWER CORD
33	NHA1800J	NUT, NH1-3 FEMY	75	MRC1836	SCREW, MRC+3X8 FBK
34	563-052A	TERMINAL AY, ANTENNA	76	324-237A	HOLDER BASE
35	573-047B	SOCKET AY, RCA	77	TRQ1836I	SCREW, TRQ2+3X8A FBK
36	434-003F	ROLLER	78	324-238A	HOLDER ANTENNA HOUSING
	434-003E	ROLLER	79	881-0032	TUBE VINYL FR-1 #6
37	353-610A	SHAFT, ROLLER			4.1X5.2 BK
38	421-618E	SHAFT AY,TUNING	80	219-010A	HOUSING ANTENNA
39	511-296A	P.W.B. AY, IF AMP	81	321-149A	BRACKET ANTENNA
	513-301A	P.W.B. IF AMP	82	324-271A	HOLDER, WIRE
40	TCQ1836J	SCREW, TCQ+3X8 FEMY	83	MRC1836I	SCREW, MRC+3+8 FBK
41	TCQ1836J	SCREW, TCQ+3X8 FEMY	84	TRQ1830I	SCREW, TRQ2+3X6A FBX
42	384-036A	GUIDE, REFLECTION	85	365-060C	METAL, CKT FIXING
43	321-186A	BRACKET, LAMP		TRQ1836J	SCREW, TRQ2+3XBA
44	TRQ1836J	SCREW, TRQ2+3X8A	86	353-607B	SCREW, SPECIAL
45	MRC1830J	SCREW, MRC+3X6	87	573-030A	SOCKET AY
46	365-060C	METAL, CKT FIXING	88	472-604B	FELT
			89	NHA1800J	NUT, NH1-3 FEMY
			90	582-014A	LAMP AY
			91	315-039A	FRAME(L), SIDE
			92	258-069C	PANEL, BACK (GST-1000)
				258-069I	PANEL BACK (GST-1010)

ELECTRICAL PARTS LIST

NO.	SYMBOL NO.	PART NO.	DESCRIPTION
34	R292, 285	RD331J09	"
35	R210, 211, 212, 232	RD562J09	" 5.6K-J ¼WM
36	R253, 254	RD562J09	" "
37	R215, 236, 257, 258	RD154J09	" 150K-J ¼WM
38	R271, 272	RD154J09	" 150K-J ¼WM
39	R217, 235, 250	RD123J09	" 12K-J ¼WM
40	R219, 238, 239, 265	RD102J09	" 1K-J ¼WM
41	R219	RD391J09	" 390K-J ¼WM
42	R266, 273, 274	RD102J09	" 1K-J ¼WM
43	R220, 242, 280, 282	RD223J09	" 22K-J ¼WM
44	R221, 224, 275	RD103J09	" 10K-J ¼MW
45	R276, 286	RD103J09	" "
46	R222, 248, 277	RD822J09	" 8.2K-J ¼WM
46	R222, 248, 277	RD822J09	" "
48	R223, 234, 243	RD221J09	" 220K-J ¼WM
49	R284, 287	RD221J09	" "
50	R225, 226, 228, 229	RD333J09	" 33K-J ¼WM
51	R227	RD221J09	" 220-J ¼WM
52	R230, 231, 267, 268	RD104J09	" 100K-J ¼WM
53	R337, 259, 260	RD473J09	" 47K-J ¼WM
54	R241	RD183J09	" 18K-J ¼WM
55	R213, 214, 244	RD100J09	" 82-J ¼WM
56	R251, 252	RD102J09	" 1K-J ¼WM
57	R261, 262	RD823J09	" 82K-J ¼WM
58	R288	RD560J09	R. CARBON FILM 56-J ¼WM
59	R289	RD470J09	" 47-J ¼WM
60	R293	RD392J09	" 3 9K-J ¼WM
61	R290	RD564J09	" 560K-J ¼WM
62	R279, 294	RD681J09	" 680-J ¼WM
63	C101, 116	CC150J06	C. CERAMIC CC150PF-J SL 50V
64	C110	CC101J01	" CC100PF-J SL 50V
65	C103, 105, 106	CK223Z02	" CKO 022MF-Z 50V
66	C111, 112, 117	CK223Z02	" "

NO.	SYMBOL NO.	PART NO.	DESCRIPTION
1	TR101	667-008B	FET 3SK-59GR
2	TR102, 103	664-014C	TRANSISTOR TOSHIBK K. 2SC785-O
3	TR201	664-405B	" 25C380-O
4	TR202, 203, 204	664-403A	" 35C374-BL
5	TR205, 206	"	" "
6	TR207	664-410C	" 2SC733-GR
7	TR208	664-403A	" 2SC374-BL
8	TR209	664-601B	" 2SD234-O
9	T101	644-610A	COIL FM IFT
10	T201	637-602B	COIL FM DOUBLE-TUNING
11	T202	644-609C	COIL MW IFT (DOUBLE TUNNING)
12	L101	635-607C	COIL FM RF
13	L102	635-607A	COIL FM RF
14	L103	635-607B	COIL FM RF
15	L106	635-607D	COIL FM RF
16	L104, 105, 107	636-602B	COIL, CHOKE
17	R101	RD105J02,	R, CARBON FILM 1.0M-J ¼WR
18	R102	RD393J02	" 39K-J ¼WR
19	R103	RD683J09	" 68K-J ¼WM
20	R104, 109	RD220J02	" 22-J ¼WR
21	R105	RD331J02	" 330-J ½WR
22	R106	RD472J02	" 4.7K-J ¼WR
23	R107	RD223J02	" 22K-J ¼WR
24	R108	RD102J02	" 1K-J ¼WR
25	R110	RD101J09	" 100-J ¼WR
26	R111	RD822J02	" 8.2K-J ½WR
27	R112	RD103J02	" 10K-J ¼WR
28	R113	RD272J02	" 2, 7K-J ¼WR
29	R201, 246, 247, 249	RD332J09	" 3, 3K-J ¼WR
30	R263, 264, 283	RD332J09	" "
31	R202, 204, 233, 291	RD471J09	" 470-J ¼WM
32	R203	RD821J09	" 820-J ¼WM
33	R206, 208, 216	RD331J09	" 330-J ¼WM

NO.	SYMBOL NO.	PART NO.	DESCRIPTION
67	C104, 107	CC180J06	" CC18PF-J CH 50V
68	C108	CC120C06	" CC12PF-CH 50V
69	C113	CC180K04	" CC18PF
70	C119	CC040D06	" CC4PF-D CH 50V
71	C109	CC010C06	C. CERAMIC CC1PF-C CK 50V
72	C114	CC120J12	" CC8PF-D CH 50V
73	C115	CC330J06	" CC33PF-J CH 50V
74	C252, 253	CC100D01	" CC10PF-D SL 50V
75	C262	CC160J01	" CC47PF-J SL 50V
76	C250, 251, 279	CC470J01	" CC100PF-J SL 50V
77	C215, 282	CC101J01	" CC220PF-J SL 50V
78	C271	CC221J01	" CC220PF-J SL 50V
79	C205, 296, 209, 225	CK103Z02	" CKO. 01MF-Z 50V
80	C287, 290, 291	CK103Z02	" CKO. 02MF-Z 50V
81	C201, 202, 203, 204	CK223Z02	" CKO. 022MF-Z 50V
82	C207, 208, 219, 221	CK223Z02	" "
83	C220, 222, 261, 265	CK473Z02	" CKO. 047MF-Z 50V
	280		
84	C213, 223, 224	CE105F01	C. ELECTROLYTIC 1MF 50V
85	C286	CE335F01	" 3.3MF 50V
86	C217, 273, 283	CE475C01	" 4.7MF 50V
87	C214, 227, 228, 229	CE106C01	" 10MF 16V
	54, 55, 68		
88	C292	CE336C01	" 33MF 16V
89	C230, 256, 257	CE476C01	" 47MF 16V
90	C269, 270	CE476C01	" "
91	C231	CE335F07	" L.N. 3.3MF 50V
92	C240, 241, 258, 259	CE475F07	" L.N. 4.7MF 50V
93	C281, 288	CE107C01	" 100MF 16V
94	C233, 272	CE227C01	" 220MF 16V
95	C284, 289	CE227D01	" 220MF 25V
96	C285	CE477D01	" 470MF 25V
97	C238	CE474F01	" 0.47MF 50V
98	C210, 264, 274, 275	CQ103M01	" 0.01MF-M 50V
99	C278, 266, 267	CQ103M01	" 0.01MF-M 50V
100	C226, 237	CQ104M01	" 0.1MF-M 50V

NO.	SYBMOL NO.	PART NO.	DESCRIPTION
101	C232	CQ102M01	" 0.001MF-M 50V
102	234	CQ473M01	" 0.047MF-M 50V
103	C246, 247, 248, 249	CQ124J01	" 0.12MF-J 50V
104	C276	CQ124J01	" "
105	C239	CQ334J01	" 0.33MF-J 50V
106	C244, 245	CQ682J01	" 0.0068MF-J 50V
107	C243, 242	CQ472J01	C. POLYESTER 0.0047MF-J 50V
108	C260	CQ223M01	" 0.022MF-M 50V
109	C263	CY351J01	" 350PF-JR
110	C236	CY152J01	" 1.500PF-JR
111	D201, 202, 203	651-001D	DIODE DETECT IS188FM-1
112	D211, 212	651-001D	DIODE DETECT 2 IS188FM-1
113	D204, 205, 206	651-020A	DIODE IS188FM-2
114	D213, 214	651-020A	DIODE IS188FM-2
115	D207, 221	654-012A	DIODE BIASING GSD0043
116	D210, 215, 216, 217	652-005B	DIODE RECTIFIER IN4002
	218		
117	D219, 220	654-411B	DIODE ZENER RD13EB
118	IC201	668-024A	INTEGRATED CIRCUIT TA7060P
119	IC202	668-020A	IC LA1 230 (IF)
120	IC203	668-025A	INTEGRATED CIRCUIT LA3350
121	IC204	668-026A	" HA1138
122	IC205, 206	668-027A	" TA7136P
123	VR201, 202, 203, 209	613-022G	VR, SEMI-FIXED SR19R-47KB 10D
124	VR204	613-022E	" SR19R-150KB 10D
125	VR205	613-022D	" SR19R-22KB 10D
126	VR206	613-022C	" SR19R-4.7KB 10D
127	VR207	613-022A	" SR19R-1KB 10D
128	VR208	613-022B	" SR19R-10KB 10D
129	VR210	613-022F	" SR19R-10KB 10D
130		582-013A	LAMP, FUSE LAMP, FUSE TYPE
131		585-105C	FUSE, 250V 500mA 5.2X20m/m
132		585-112C	FUSE, 250V, 1.6A 5.2X20m/m
133		511-326A	P.W.B. AY, LAMP INDICATOR
134		556-032A	SWITCH, LEVER, SDE-4L
135	C1	CK103P03	C, CERAMIC CK 0.01MF-P 500V